

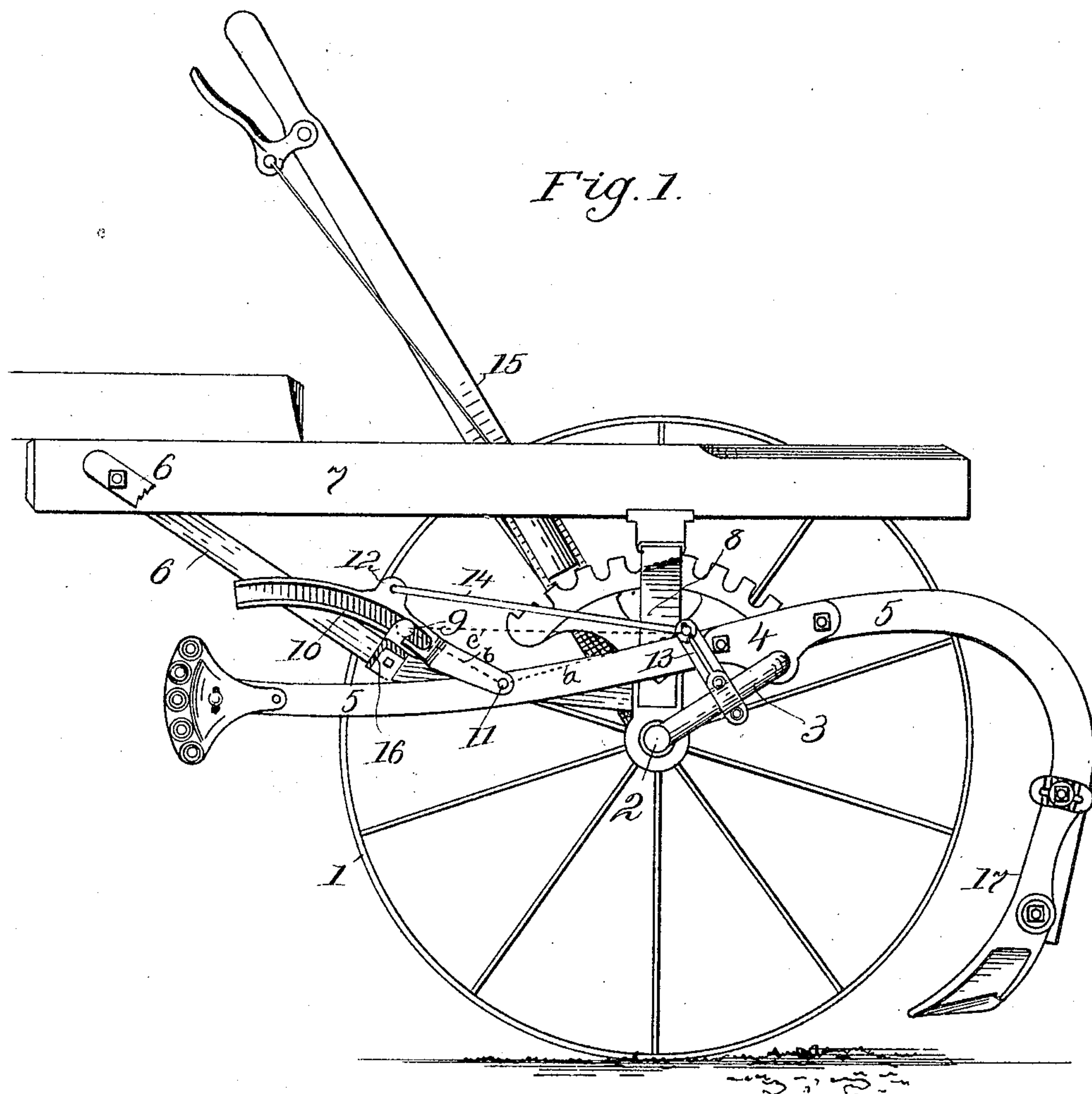
No. 808,605.

W. S. GRAHAM.
PLOW.

PATENTED DEC. 26, 1905.

APPLICATION FILED OCT. 3, 1905.

2 SHEETS—SHEET 1.



Witnesses.

Wm. Graham.

Mrs. Graham.

Inventor.

William S. Graham

by L. P. Graham

his attorney.

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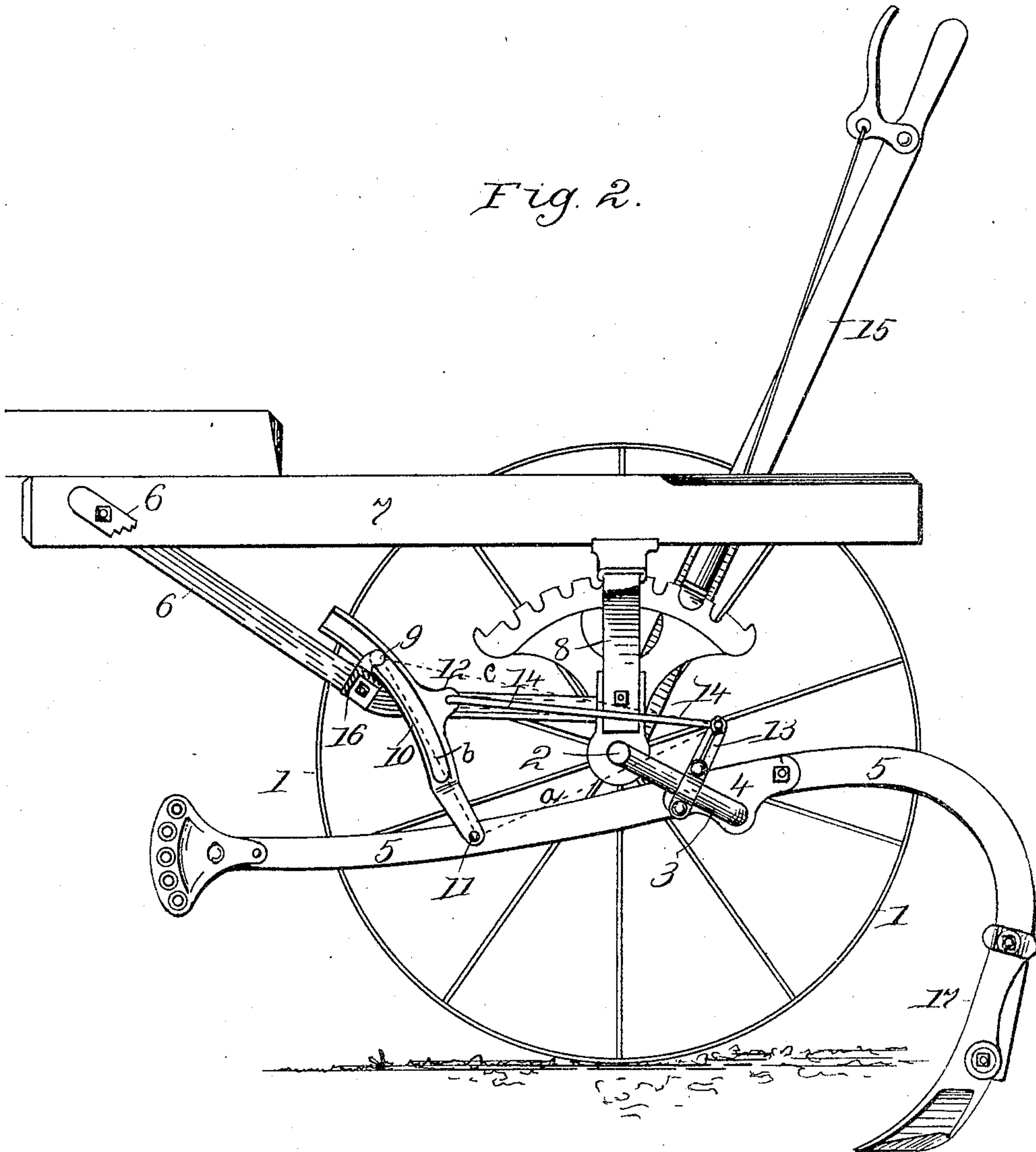
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2 SHEETS—SHEET 2.

Fig. 2.



Witnesses.

Nora Graham

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UNITED STATES PATENT OFFICE.

WILLIAM S. GRAHAM, OF CANTON, ILLINOIS, ASSIGNOR TO PARLIN & ORENDORFF COMPANY, OF CANTON, ILLINOIS, A CORPORATION OF ILLINOIS.

PLOW.

No. 808,605.

Specification of Letters Patent.

Patented Dec. 26, 1905.

Application filed October 3, 1905. Serial No. 281,164.

To all whom it may concern:

Be it known that I, WILLIAM S. GRAHAM, a resident of the city of Canton, county of Fulton, and State of Illinois, have invented certain new and useful Improvements in Plows, of which the following is a specification.

This invention has particular reference to sulky lister-plows; and the object is to provide means that will hold the plow-beam against longitudinal tilt while permitting free vertical adjustment or raising and lowering of the plow, and that will therefore compel the plow to cut evenly to the depth to which it is adjusted.

The invention is exemplified in the structure hereinafter described, and it is defined in the appended claims.

In the drawings forming part of this specification, Figure 1 is a side elevation of as much of a sulky-plow as is needed to explain my invention, the plow-beam being shown raised. Fig. 2 is the same as Fig. 1, except that the beam is shown lowered.

The drawings are diagrammatic. They are intended to illustrate the mode of operation and the principle involved rather than to give precise details of mechanical construction, and parts of a complete plow not essential to the invention are generally omitted.

One of the wheels of the plow is removed from the axle and the other one is shown at 1. The axle 2 is doubly cranked, as shown at 3, to form a lift-bail for the plow-beam 5. A casting 4 is attached to the plow-beam rigidly and to the lift-bail pivotally. An arch 8 sustains the frame, of which beam 7 is an element, and bars 6 extend from opposite sides of beam 7 to opposite sides of the arch 8. A cross-bar 16 is secured to bars 6 above and in front of the axle, and it has an extension 9, which is provided with a pair of bearing-bosses presented one to the other. An arc-formed bar 10 is pivotally connected at one end to the plow-beam 5, as shown at 11, and it is grooved lengthwise in its sides to receive the bearing-bosses of extension 9. An arm 13 is attached to a crank extension of the axle, and a rod 14 is pivotally connected at one end with the arm 13 and at the other end to a lug 12 on the grooved bar 10. A lock-lever 15 is attached to the axle, and a shank 17 on the downward extension of the

plow-beam provides means for attaching various plows to the beam.

When the lock-lever is swung backward or forward, the axle is rocked on its spindles and the bail extension acts as a lever to raise and lower the plow-beam. The arc-formed bar 10 slides on the bearings on cross-bar 16 and swings on pivot 11 as the plow-beam is raised or lowered, and the rod 14 controls the swing of bar 10 with relation to the plow-beam, so as to cause the entire beam to rise and fall uniformly and to hold the beam in proper plowing position when it is lowered.

The slide-bearings 9, the pivot 11, and the connection of rod 14 with arm 13 form the three corners of a varying triangle, (shown by dotted lines in the drawings and designated by the reference-letters *a b c*,) which acts as a stay structure to hold the beam from tilting without interfering with its transitory or bodily movements up and down. In Fig. 1 the triangular stay is diminished by the position of the parts, and as the beam is lowered to the position shown in Fig. 2 the triangle gradually becomes larger.

The lock-lever 15 holds the cranked axle in various positions. When the plow-beam is locked, the different parts of the stay structure are also locked in place, and at such times the action is the same as if the bar 10 were an integral part of the plow-beam or were rigidly attached thereto. The bearings 9 are located well to the front of the pivot of the plow-beam upon the lift-bail. They are rigidly secured to the cross-bar of the frame, and they coact with the bail-pivot at all times to hold one end of the beam from moving vertically independent of the other end.

The arm 13 is, in effect, a part of the bail 3. It is preferably extended at approximately right angles with the bail in order to get desired backward motion as the beam descends, and its function is to shift the rod 14 lengthwise to permit the movement in the slotted bar 10 necessary to give the desired motion to the front end of the beam. Any connection of the brace-rod with the bail or even with the beam which will give the desired motion to the slotted guide-bar is within the principle involved in the invention.

The grooves in the sides of bar 10, into which bosses of the relatively fixed bearings

9 extend, are typical merely of a slidable connection between the bearings and the slidable bar, and various substitutes for this particular slidable connection will readily occur to skilled mechanics.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a plow, the combination of a frame, a plow-beam, a swingable lift for the plow-beam pivoted at one end in the frame and at the other end to the plow-beam, a bearing fixed in the frame in front of the plow-lift, a slide-bar pivotally secured at one end to the plow-beam with its free end in slidable connection with the relatively fixed bearing, a brace-rod connecting the sliding end of the slide-bar to the swinging part of the plow-lift, and means for rocking the plow-lift.

2. In a plow, the combination of a frame, a plow-beam, a swingable lift for the plow-beam pivoted at one end in the frame and at the other end to the plow-beam, a bearing fixed in the frame in front of the plow-lift, an arc-formed slide-bar pivotally secured at one end to the plow-beam and held in slidable connection with the relatively fixed bearing, a brace-rod connecting the sliding part of the arc-formed bar with the swinging part of the plow-lift, and a lock-lever attached to the plow-lift.

3. In a plow, the combination of a frame, a cranked shaft pivotally sustained in the frame, a plow-beam pivotally connected with the cranked part of the shaft, a bearing fixed in the frame in front of the shaft, a slide-bar pivotally secured at one end to the plow-beam and held in slidable connection with the relatively fixed bearing, a brace-rod connecting the sliding part of the slide-bar to the crank of the shaft and a lock-lever attached to the shaft.

4. In a plow, the combination of a frame, wheels sustaining the frame, a cranked axle for the wheels, a plow-beam pivotally con-

nected with the cranked part of the axle, a bearing fixed in the frame in front of the axle, a slide-bar pivotally secured at one end to the plow-beam and held in slidable connection with the relatively fixed bearing, a brace-rod connecting the sliding part of the slide-bar with the cranked part of the axle, and a lock-lever attached to the axle.

5. In a plow, the combination of a frame, a plow-beam, a swingable lift for the plow-beam pivoted at one end in the frame and at the other end in the plow-beam, a bearing fixed in the frame in front of the plow-lift, a slide-bar pivotally secured at one end to the plow-beam and held in slidable connection with the relatively fixed bearing, an arm on the plow-lift extending upward therefrom, a brace-rod connecting the upper end of the arm with the sliding part of the slide-bar, and a lock-lever for the plow-lift.

6. In a plow, the combination with a frame, a plow-beam and a plow-beam lift, of a two-part stay structure pivotally connected together and pivoted one on the beam and the other on the lift, and a relatively fixed bearing in the frame with which the stay structure is slidably connected, substantially as described.

7. In a plow, the combination with a frame, a plow-beam and a plow-beam lift, of a stay structure pivotally conjoined and forming with the beam and the lift a variable triangle, and a relatively fixed bearing in the frame with which the stay structure is slidably connected, substantially as described.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

WILLIAM S. GRAHAM.

Witnesses:

W. B. BARNEY,
K. D. VITTUM.